

**L.G. HANSCOM FIELD
HANGAR 24 ARCHIVAL DOCUMENTATION
FORMER CHARLES STARK DRAPER LABORATORY AND
MIT LINCOLN LABORATORY
Concord, Massachusetts**

The following Photographic Documentation Package draws on archival materials prepared for The Massachusetts Port Authority (Massport), located at 1 Harborside Drive, Suite 200S, East Boston, MA 02128 by Public Archaeology Laboratory (PAL) located at 210 Lonsdale Avenue, Pawtucket, RI 02860.

CONTENTS

Project Summary/Historic Context

- **Site Location Map**
- **Aerial Photograph of Site (2009)**

Massachusetts Historical Commission Form B – Building Inventory

Index to Black and White Building Photographs

- **Key Maps**
- **Photographs**

Index to Historical Images

- **Historical Images**

**PHOTOGRAPHIC DOCUMENTATION
MIT INSTRUMENTATION LABORATORY FLIGHT FACILITY
(MIT Lincoln Laboratory Flight Test Facility)
(Massport Hangar 24)**

Location: Lawrence G. Hanscom Field
711 Virginia Road
Concord, Middlesex County, Massachusetts
USGS Maynard Quadrangle, 1987
Universal Transverse Mercator Coordinates:19.310901.47035758

Date of Construction: 1948 (erected at Hanscom Field)

Architect: U.S. Army Air Corps/Army Corps of Engineers and MIT

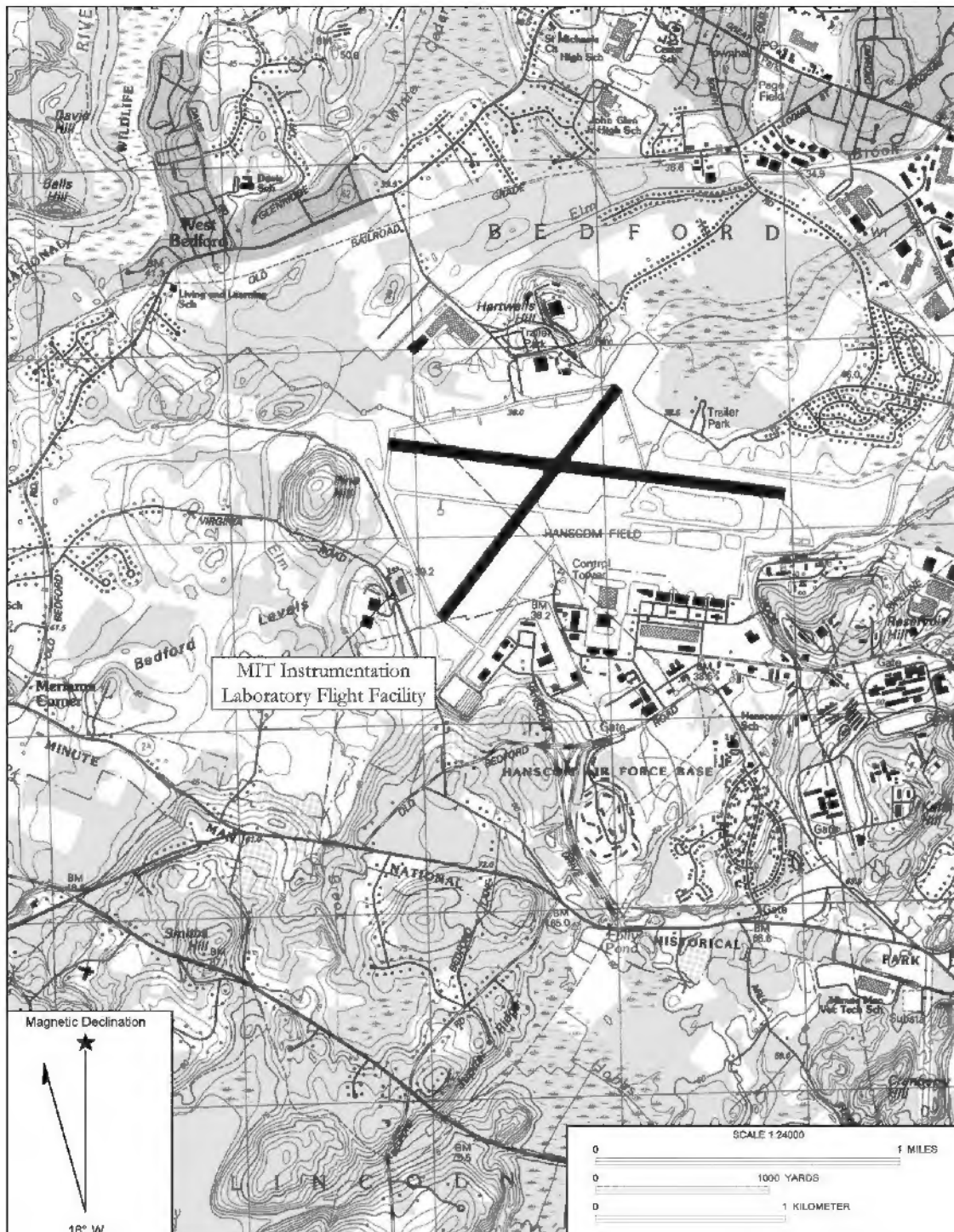
Property Owner: Massachusetts Port Authority (Massport)

Significance: The MIT Instrumentation Laboratory Flight Facility (the Flight Facility, commonly referred to as Hangar 24) was erected at Hanscom Field in 1948 to support defense- and space-related electronic navigation instrumentation testing conducted by the Massachusetts Institute of Technology (MIT) Instrumentation Laboratory (IL), and later, the Charles Stark Draper Laboratory and MIT Lincoln Laboratory (see the Massachusetts Inventory of the Historic Assets of the Commonwealth Form B, CON.9047 in Appendix A). Under the leadership of MIT professor Charles Stark Draper, the IL developed and tested groundbreaking inertial navigation and flight guidance systems. The hangar was determined by the MA Historical Commission (MHC) to be significant under National Register of Historic Places Eligibility Criterion A at the local, state, and national levels for its historical associations with developments in flight and defense during the second half of the 20th century. Because of its associations with Charles Stark Draper, the MIT Hangar was also found to be also significant under Criterion B. Criterion B applies to properties associated with individuals whose specific contributions to history can be identified and documented. Persons "significant in our past" refers to individuals whose activities are demonstrably important within a local, State, or national historic context. The criterion is generally restricted to those properties that illustrate (rather than commemorate) a person's important achievements.

Project Information: The Massachusetts Port Authority (Massport) proposed to demolish the MIT Instrumentation Laboratory Flight Facility at Hanscom in Concord, Massachusetts. The Flight Facility is included in the Massachusetts Historical Commission's (MHC) Inventory of Historic Assets of the Commonwealth and has been determined by MHC to meet the Criteria of eligibility for listing in the National Register of Historic Places (National Register). Massport's proposal fell under the review of the Federal Aviation Administration (FAA) and was therefore subject to Section 106 of the National Historic Preservation Act (36 CFR 800), as well as to Massachusetts General Laws (MGL) c.9, ss. 26-27C. Accordingly, the FAA, Massport, MHC, and the Concord Historical Commission entered into consultation to seek ways to avoid, minimize, or mitigate the undertaking's impacts. As a result of the consultation, a Memorandum of Agreement (MOA) was signed by the consulting parties, with the exception of the Concord Historical Commission. The MOA includes a stipulation that Massport will prepare this photographic documentation of the Flight Facility to the standards of the MHC. The materials in this package represent the photographs collected for compliance with the MOA.

MIT INSTRUMENTATION LABORATORY FLIGHT FACILITY
(MIT Lincoln Laboratory Flight Test Facility)
(Massport Hanger 24)
Concord, Massachusetts

USGS Massachusetts, 1:25,000 Maynard Quadrangle (1987) showing location of the MIT Instrumentation Laboratory Flight Facility.



MIT INSTRUMENTATION LABORATORY FLIGHT FACILITY
(MIT Lincoln Laboratory Flight Test Facility)
(Massport Hanger 24)
Concord, Massachusetts

Aerial photograph of Concord showing location of Flight Facility (Google Maps, 2009).



FORM B - BUILDING

MASSACHUSETTS HISTORICAL COMMISSION
MASSACHUSETTS ARCHIVES BUILDING
120 MORRISSEY BOULEVARD
BOSTON, MASSACHUSETTS 02125

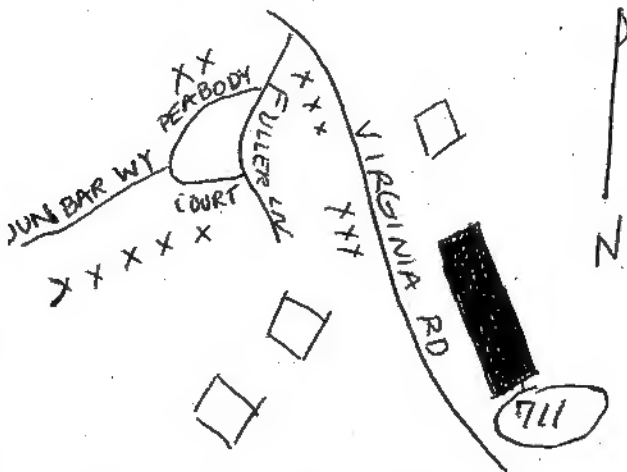
Photograph

3" x 3" or 3-1/2" x 5" black and white only) Label photo on back with town and property address. Record film roll and negative numbers here on the form. Staple photo to left side of form over this space. Attach additional photos to continuation sheets.

The attached 8-1/2 x 11 inch photos are all we have. We are unable to provide current photos because we do not have access to the site, which is on Massport property. The attached black & white photo appears to have been taken in the late 1940s or early 50s, the color photo in the 1990s.

Sketch Map

Draw a map showing the building's location in relation to the nearest cross streets and/or major natural features. Show all buildings between inventoried building and nearest intersection or natural feature. Label streets including route numbers, if any. Circle and number the inventoried building. Indicate north.



Recorded by Anna West Winter, Executive Director

Organization Save Our Heritage
57 Main St., Concord, MA 01742

Date September 15, 2006

RECEIVED**SEP 18 2006****MASS. HIST. COMM**

Follow Massachusetts Historical Commission Survey Manual instructions for completing this form.

Assessor's Number USGS Quad Area(s) Form Number

4290

Maynard

9097

Town Concord**Place** (neighborhood or village) Hanscom Field**Address** 711 Virginia Road

Historic Name MIT Instrumentation Laboratory Flight Facility (1948-73); MIT Lincoln Laboratory Flight Facility (1973-2001); generically referred to as the MIT Hangar, and as Hangar 24 in Massport documents

Uses: Present Vacant, slated for demolition.

Original Development and testing of inertial navigation and guidance systems, radar systems, and other aerospace technologies, both military and civilian

Date of Construction Built at Hunter Army Airfield in Savannah, GA, date unknown, probably 1930s. Disassembled, shipped north and reconstructed at Hanscom, 1948.

Source 1995 Hanscom Field GEIR Update, Table 2.1-1; interview with former Instrumentation Lab test pilot

Style/Form Steel 2-bay hangar, closed Howe truss

Architect/Builder Unknown

Exterior Material Steel

Foundation Cinder block

Wall/Trim Steel

Roof Steel

Outbuildings/Secondary Structures None currently in use. One outbuilding was an experimental solar energy station; purpose of others unknown.

Major Alterations (with dates) Building height was increased during 1948 reconstruction at Hanscom to accommodate larger aircraft.

Condition Fair to poor

Moved ☐ no ☐ yes **Date** See "Date of Construction"

Acreage The 39,840 sq. ft. hangar is located on an assessor's lot of 251.81 acres, containing other buildings and airport uses unrelated to this inventory form.

Setting On asphalt pavement, facing Runway 5. Acreage includes substantial grassy areas. Rear of hangar is adjacent to Virginia Road, in an area of residential housing and office parks.

BUILDING FORM

ARCHITECTURAL DESCRIPTION ☐ see continuation sheet

Describe architectural features. Evaluate the characteristics of this building in terms of other buildings within the community.

This is a double-bay steel hangar with an arch design of the type known as a closed Howe truss. The Army Air Corps developed several standard hangar plans in the late 1920s and early 30s, of which this is one. This hangar is probably based on a type A-A plan, but a definite determination cannot be made without more research.

HISTORICAL NARRATIVE ☒ see continuation sheet

Discuss the history of the building. Explain its associations with local (or state) history. Include uses of the building, and the role(s) the owners/occupants played within the community.

The hangar was originally constructed at Hunter Army Airfield in Savannah, Georgia, probably in the 1930s. In 1948 it was disassembled, shipped by barge to Boston and then by rail to Hanscom Field, where it was reassembled. The hangar was needed at Hanscom to serve as a test facility for the MIT Instrumentation Laboratory, under the direction of legendary engineer Charles Stark Draper.

Charles Draper founded what was originally called the MIT Instrument Lab in 1932 to further his research and teaching on aircraft instrumentation. The facility's name was changed to the Confidential Instrument Development Laboratory when Draper began working on military contracts in World War II. One of his key inventions during the war was the Mark 14 gunsight, which was designed to work while mounted on an anti-aircraft gun on the deck of a ship. The Mark 14 displaced the gun's line of sight so that the operator, while tracking the target, would actually be pointing the gun at the target's future location, enabling the shell to arrive at the right place at the right time. This innovation enabled American gunners to shoot down numerous Japanese kamikazes. One newspaper announced the Mark 14's success with the headline, "Wizard MIT Gyro Gunsight Ends [Japanese] Air Mastery Over Sea," and the Boston Herald American said that the Mark 14 had "saved countless thousands of American lives." (Cont'd)

BIBLIOGRAPHY and/or REFERENCES ☐ see continuation sheet

Freeman, C., ed., *MIT Lincoln Laboratory - Technology in the National Interest* (Nimrod Press, 1995)

U.S. Army Corps of Engineers, *Historical and Architectural Overview of Military Aircraft Hangars* (1999) (available in electronic form only at http://www.cecer.army.mil/techreports/webster98/webster98_idx.htm)

Draper Laboratory, *Draper at 25 - Innovations for the 21st Century* (1998) (available in electronic form only at <http://www.draper.com/publications/draper25/draper25.htm>)

Massport, *Hanscom Field 1995 Generic Environmental Impact Report* and *L.G. Hanscom Field 2000 Environmental Status and Planning Report*

☒ Recommended for listing in the National Register of Historic Places. If checked, you must attach a completed National Register Criteria Statement form.

INVENTORY FORM CONTINUATION SHEETTown
CONCORDProperty Address
711 VIRGINIA RD.**MASSACHUSETTS HISTORICAL COMMISSION
MASSACHUSETTS ARCHIVES BUILDING
220 MORRISSEY BOULEVARD
BOSTON, MASSACHUSETTS 02125**

Area(s) Form No.

	9.17
--	------

Historical Narrative (cont'd): After the war, Draper's newly renamed MIT Instrumentation Laboratory, in need of a flight test facility for its aeronautical engineering work, used temporary facilities at Hanscom Field until it received its own hangar in 1948. Of Draper's many contributions to aeronautical engineering, his work on inertial navigation and guidance systems was perhaps the most profoundly innovative and far-reaching in its applications. In February 1953, an Air Force B-29, carrying Draper and seven others from the Instrumentation Laboratory, took off from Hanscom Field and made the first coast-to-coast flight guided entirely by an inertial navigation system, with no outside communication and no post-takeoff pilot input (except for a single planned course correction). Upon arrival in Los Angeles, Draper and his colleagues drove to a top-secret conference on inertial guidance, where, to the astonishment of all, Draper described the historic flight he had just made.

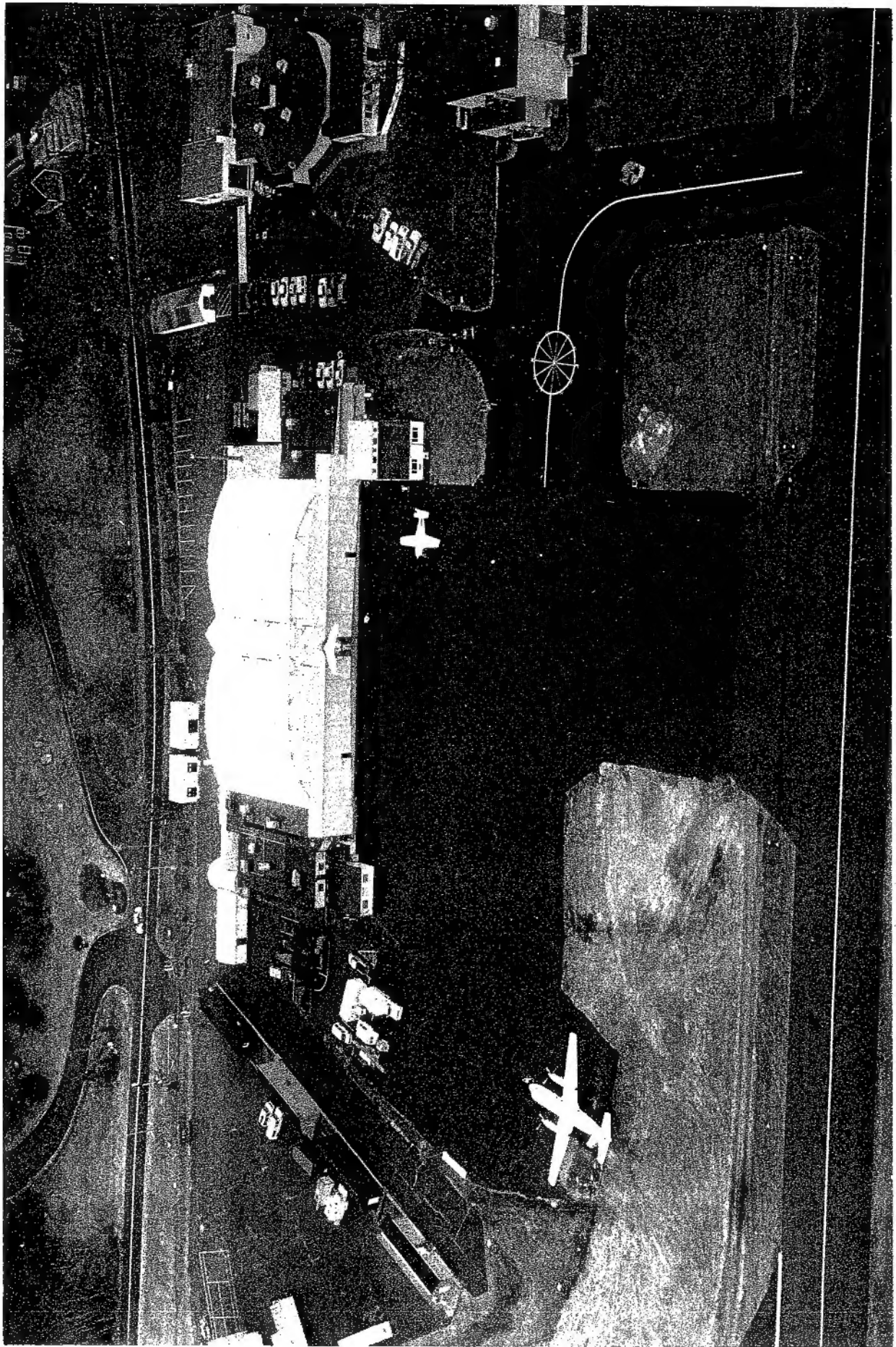
This was the forerunner of modern inertial navigation systems for commercial aviation. Draper went on to develop inertial guidance systems for Air Force and Navy intercontinental ballistic missiles and, eventually, for NASA's Apollo moon missions. These inventions were all tested and refined at MIT's Hanscom Field hangar.

The MIT Hangar was also used as a test facility for many years by Lincoln Laboratory, which MIT originally established at Hanscom in 1951 in response to the Air Force's request for technical assistance in developing an air defense system against the threat of a Soviet nuclear attack. Throughout the second half of the 20th century, Lincoln Laboratory developed a vast array of sophisticated radar systems for a wide variety of military applications. Again, all of these systems were tested and refined at MIT's Hanscom Field hangar. Indeed, after the Instrumentation Lab was spun off from MIT in 1973 to become an independent entity called the Charles Stark Draper Laboratory, the MIT Hangar was dedicated to Lincoln Laboratory's exclusive use and was formally renamed the MIT Lincoln Laboratory Flight Facility.

Beginning in the 1970s, Lincoln Laboratory also developed technologies that revolutionized civilian air traffic control. The most significant of these may be the Traffic Alert Collision Avoidance System, which enables aircraft to communicate position information to each other in order to avoid midair collisions. Nearly 2,000 planned near-miss encounters were flown out of the MIT Hangar in support of this critical public safety effort. This device is now required in all medium to large commercial aircraft in the United States and is slated for a worldwide mandate by the International Civil Aviation Organization.

Another noteworthy, and indeed unique, project originated at the Lincoln Laboratory Flight Facility in 1986. MIT and Anheuser-Busch organized a joint venture to construct a human-powered aircraft to fly 69 miles from the Island of Crete to the Greek mainland, bringing to reality the ancient mythological flight of Daedalus and his son Icarus. The aircraft, christened "Eagle," was built within the MIT Hangar and successfully flown between the two points, covering the required distance. The Eagle had a 102-foot wingspan – as wide as a DC-10 – but weighed only 69 pounds. Versions of this aircraft are on display at the Boston Museum of Science and the Smithsonian Air & Space Museum.

In September 2001, MIT established a new flight test facility on Air Force property within Hanscom Air Force Base, leaving Hangar 24 vacant. As of this writing it is slated for demolition because the owner, Massport, is actively seeking a developer to construct a new Fixed Base Operator (FBO) on the site. An FBO provides fuel, maintenance and repair services for private aircraft, as well as conference rooms and other amenities for the use of the passengers and crew of private planes.





Index to Black and White Building Photographs

Photographer: Matthew M. Kierstead, PAL
210 Lonsdale Avenue
Pawtucket, Rhode Island
Date: July, 2008

1. General view of the MIT Instrumentation Laboratory Flight Facility, looking northwest. At far left are the cinderblock NASA and PACE II additions. At far right is the Flight Operations Building.
2. General view of the Flight Facility, looking northwest. At far left are unidentified storage buildings. At center are the two-story NASA and PACE II additions (left and right).
3. Rear view of the Flight Facility, looking northeast. At foreground are the storage buildings.
4. Rear view of the Flight Facility, looking southeast. "Chapel" addition is at left. In foreground are North and West Lean-To's, part of original construction.
5. General view of Flight Facility, looking southwest. In foreground is Flight Operations Building.
6. East elevation of Flight Facility, looking northwest.
7. Detail of south hangar door, east elevation, looking west.
8. View of NASA (background) and PACE II (foreground) additions on south elevation of Flight Facility, looking northwest.
9. View of NASA (left) and PACE II (right) additions on south elevation of Flight Facility, looking north. Garage at left is part of SPIRE addition.
10. South and east elevations of storage buildings on southwest corner of Flight Facility, looking northwest.
11. West and south elevations of storage buildings, looking northeast.
12. Southwest corner of Flight Facility, looking northeast.
13. Northwest corner of Flight Facility, looking southeast.
14. Northwest corner of "Chapel" addition, looking southeast.
15. North elevation of "Skipper B" addition, looking southeast.
16. Flight Facility sign mounted on exposed Parker doorway truss, east elevation looking northwest.
17. Detail of Parker doorway truss and microwave antenna (right foreground). East end of Flight Facility roof, looking north.
18. Interior of Flight Facility hangar, looking northwest.
19. Detail of hangar door track and door leaf pocket, looking south.
20. Hangar interior, looking north.
21. Hangar interior and doors, looking east.
22. Hangar interior, looking southwest.
23. Interior of PACE II Flight Facility addition, looking southeast.
24. Interior of NASA Flight Facility addition, looking south.
25. Interior of unidentified lean-to addition, southwest corner of Flight Facility, looking south.
26. Security entrance in unidentified lean-to addition, southwest corner of Flight Facility, looking north.
27. Interior of West Lean-To of Flight Facility, looking north.
28. Interior of Skipper B Flight Facility addition, looking east.
29. Instrumentation test stand, Skipper B addition, looking northeast.
30. Flight Operations Building, looking northwest.
31. First floor of Flight Operations Building, looking east.
32. First floor office area of Flight Operations Building, looking southeast.
33. Second floor of Flight Operations Building, looking northwest.
34. Northeastern Station, a residential photovoltaic cell installation test complex. South end of Flight Facility lot, looking north.
35. Northeastern Station, looking east.
36. Interior view of Northeastern Station building, looking east.

MIT INSTRUMENTATION LABORATORY FLIGHT FACILITY
(MIT Lincoln Laboratory Flight Test Facility)
(Massport Hangar 24)
Concord, Massachusetts
Photo 1



General view of the MIT Instrumentation Laboratory Flight Facility, looking northwest. At far left are the cinderblock NASA and PACE II additions. At far right is the Flight Operations Building.

MIT INSTRUMENTATION LABORATORY FLIGHT FACILITY
(MIT Lincoln Laboratory Flight Test Facility)
(Massport Hangar 24)
Concord, Massachusetts
Photo 2



General view of the Flight Facility, looking northwest. At far left are unidentified storage buildings. At center are the two-story NASA and PACE II additions (left and right).

MIT INSTRUMENTATION LABORATORY FLIGHT FACILITY
(MIT Lincoln Laboratory Flight Test Facility)
(Massport Hangar 24)
Concord, Massachusetts
Photo 3



Rear view of the Flight Facility, looking northeast. At foreground are the storage buildings.

MIT INSTRUMENTATION LABORATORY FLIGHT FACILITY
(MIT Lincoln Laboratory Flight Test Facility)
(Massport Hangar 24)
Concord, Massachusetts
Photo 4



Rear view of the Flight Facility, looking southeast. "Chapel" addition is at left. In foreground are North and West Lean-To's, part of original construction.

MIT INSTRUMENTATION LABORATORY FLIGHT FACILITY
(MIT Lincoln Laboratory Flight Test Facility)
(Massport Hangar 24)
Concord, Massachusetts
Photo 5



General view of Flight Facility, looking southwest. In foreground is Flight Operations Building.

MIT INSTRUMENTATION LABORATORY FLIGHT FACILITY
(MIT Lincoln Laboratory Flight Test Facility)
(Massport Hangar 24)
Concord, Massachusetts
Photo 6



East elevation of Flight Facility, looking northwest.

MIT INSTRUMENTATION LABORATORY FLIGHT FACILITY
(MIT Lincoln Laboratory Flight Test Facility)
(Massport Hangar 24)
Concord, Massachusetts
Photo 7



Detail of south hangar door, east elevation, looking west.

MIT INSTRUMENTATION LABORATORY FLIGHT FACILITY
(MIT Lincoln Laboratory Flight Test Facility)
(Massport Hangar 24)
Concord, Massachusetts
Photo 8



View of NASA (background) and PACE II (foreground) additions on south elevation of Flight Facility, looking northwest.

MIT INSTRUMENTATION LABORATORY FLIGHT FACILITY
(MIT Lincoln Laboratory Flight Test Facility)
(Massport Hangar 24)
Concord, Massachusetts
Photo 9



View of NASA (left) and PACE II (right) additions on south elevation of Flight Facility, looking north. Garage at left is part of SPIRE addition.

MIT INSTRUMENTATION LABORATORY FLIGHT FACILITY
(MIT Lincoln Laboratory Flight Test Facility)
(Massport Hangar 24)
Concord, Massachusetts
Photo 10



South and east elevations of storage buildings on southwest corner of Flight Facility, looking northwest.

MIT INSTRUMENTATION LABORATORY FLIGHT FACILITY
(MIT Lincoln Laboratory Flight Test Facility)
(Massport Hangar 24)
Concord, Massachusetts
Photo 11



West and south elevations of storage buildings, looking northeast.

MIT INSTRUMENTATION LABORATORY FLIGHT FACILITY
(MIT Lincoln Laboratory Flight Test Facility)
(Massport Hangar 24)
Concord, Massachusetts
Photo 12



Southwest corner of Flight Facility, looking northeast.

MIT INSTRUMENTATION LABORATORY FLIGHT FACILITY
(MIT Lincoln Laboratory Flight Test Facility)
(Massport Hangar 24)
Concord, Massachusetts
Photo 13



Northwest corner of Flight Facility, looking southeast.

MIT INSTRUMENTATION LABORATORY FLIGHT FACILITY
(MIT Lincoln Laboratory Flight Test Facility)
(Massport Hangar 24)
Concord, Massachusetts
Photo 14



Northwest corner of "Chapel" addition, looking southeast.

MIT INSTRUMENTATION LABORATORY FLIGHT FACILITY
(MIT Lincoln Laboratory Flight Test Facility)
(Massport Hangar 24)
Concord, Massachusetts
Photo 15



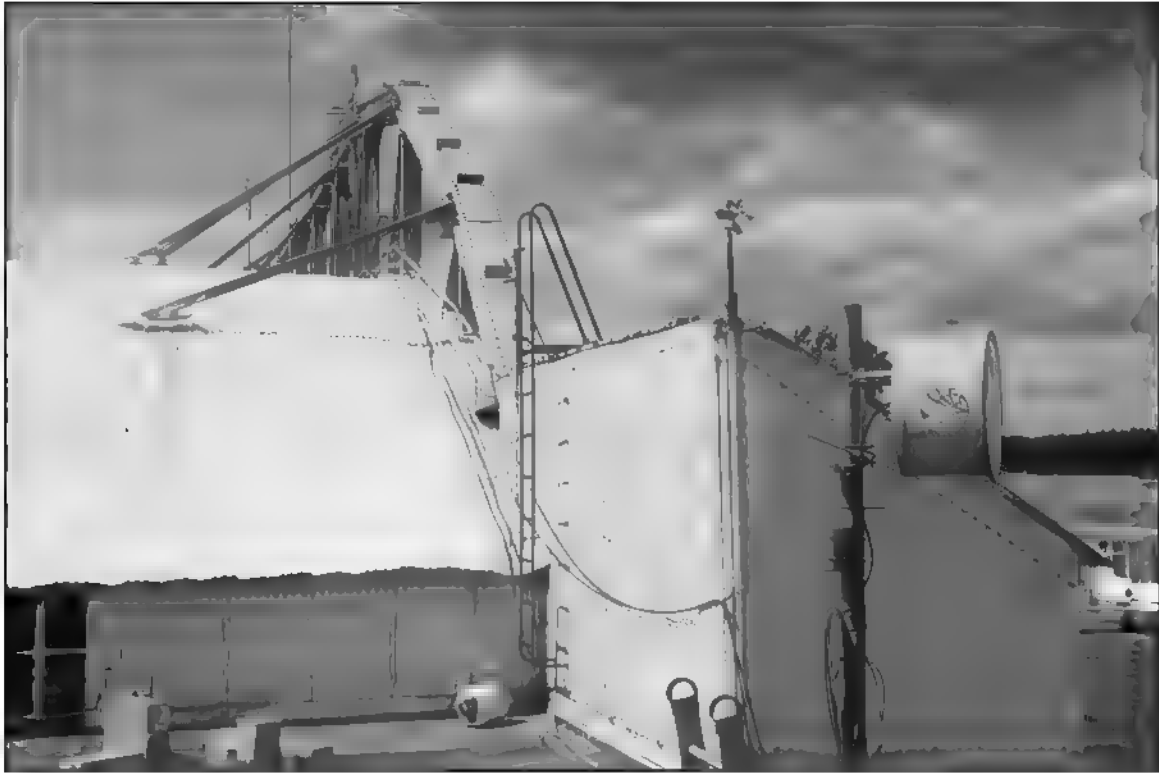
North elevation of "Skipper B" addition, looking southeast.

MIT INSTRUMENTATION LABORATORY FLIGHT FACILITY
(MIT Lincoln Laboratory Flight Test Facility)
(Massport Hangar 24)
Concord, Massachusetts
Photo 16



Flight Facility sign mounted on exposed Parker doorway truss, east elevation looking northwest.

MIT INSTRUMENTATION LABORATORY FLIGHT FACILITY
(MIT Lincoln Laboratory Flight Test Facility)
(Massport Hangar 24)
Concord, Massachusetts
Photo 17



Detail of Parker doorway truss and microwave antenna (right foreground). East end of Flight Facility roof, looking north.

MIT INSTRUMENTATION LABORATORY FLIGHT FACILITY
(MIT Lincoln Laboratory Flight Test Facility)
(Massport Hangar 24)
Concord, Massachusetts
Photo 18



Interior of Flight Facility hangar, looking northwest.

MIT INSTRUMENTATION LABORATORY FLIGHT FACILITY
(MIT Lincoln Laboratory Flight Test Facility)
(Massport Hangar 24)
Concord, Massachusetts
Photo 19



Detail of hangar door track and door leaf pocket, looking south.

MIT INSTRUMENTATION LABORATORY FLIGHT FACILITY
(MIT Lincoln Laboratory Flight Test Facility)
(Massport Hangar 24)
Concord, Massachusetts
Photo 20



Hangar interior, looking north.

MIT INSTRUMENTATION LABORATORY FLIGHT FACILITY
(MIT Lincoln Laboratory Flight Test Facility)
(Massport Hangar 24)
Concord, Massachusetts
Photo 21



Hangar interior and doors, looking east.

MIT INSTRUMENTATION LABORATORY FLIGHT FACILITY
(MIT Lincoln Laboratory Flight Test Facility)
(Massport Hangar 24)
Concord, Massachusetts
Photo 22



Hangar interior, looking southwest.

MIT INSTRUMENTATION LABORATORY FLIGHT FACILITY
(MIT Lincoln Laboratory Flight Test Facility)
(Massport Hangar 24)
Concord, Massachusetts
Photo 23



Interior of PACE II Flight Facility addition, looking southeast.

MIT INSTRUMENTATION LABORATORY FLIGHT FACILITY
(MIT Lincoln Laboratory Flight Test Facility)
(Massport Hangar 24)
Concord, Massachusetts
Photo 24



Interior of NASA Flight Facility addition, looking south.

MIT INSTRUMENTATION LABORATORY FLIGHT FACILITY
(MIT Lincoln Laboratory Flight Test Facility)
(Massport Hangar 24)
Concord, Massachusetts
Photo 25



Interior of unidentified lean-to addition, southwest corner of Flight Facility, looking south.

MIT INSTRUMENTATION LABORATORY FLIGHT FACILITY
(MIT Lincoln Laboratory Flight Test Facility)
(Massport Hangar 24)
Concord, Massachusetts
Photo 26



Security entrance in unidentified lean-to addition, southwest corner of Flight Facility, looking north.

MIT INSTRUMENTATION LABORATORY FLIGHT FACILITY
(MIT Lincoln Laboratory Flight Test Facility)
(Massport Hangar 24)
Concord, Massachusetts
Photo 27



Interior of West Lean-To of Flight Facility, looking north.

MIT INSTRUMENTATION LABORATORY FLIGHT FACILITY
(MIT Lincoln Laboratory Flight Test Facility)
(Massport Hangar 24)
Concord, Massachusetts
Photo 28



Interior of Skipper B Flight Facility addition, looking east.

MIT INSTRUMENTATION LABORATORY FLIGHT FACILITY
(MIT Lincoln Laboratory Flight Test Facility)
(Massport Hangar 24)
Concord, Massachusetts
Photo 29



Instrumentation test stand, Skipper B addition, looking northeast.

MIT INSTRUMENTATION LABORATORY FLIGHT FACILITY
(MIT Lincoln Laboratory Flight Test Facility)
(Massport Hangar 24)
Concord, Massachusetts
Photo 30



Flight Operations Building, looking northwest.

MIT INSTRUMENTATION LABORATORY FLIGHT FACILITY
(MIT Lincoln Laboratory Flight Test Facility)
(Massport Hangar 24)
Concord, Massachusetts
Photo 31



First floor of Flight Operations Building, looking east.

MIT INSTRUMENTATION LABORATORY FLIGHT FACILITY
(MIT Lincoln Laboratory Flight Test Facility)
(Massport Hangar 24)
Concord, Massachusetts
Photo 32



First floor office area of Flight Operations Building, looking southeast.

MIT INSTRUMENTATION LABORATORY FLIGHT FACILITY
(MIT Lincoln Laboratory Flight Test Facility)
(Massport Hangar 24)
Concord, Massachusetts
Photo 33



Second floor of Flight Operations Building, looking northwest.

MIT INSTRUMENTATION LABORATORY FLIGHT FACILITY
(MIT Lincoln Laboratory Flight Test Facility)
(Massport Hangar 24)
Concord, Massachusetts
Photo 34



Northeastern Station, a residential photovoltaic cell installation test complex. South end of Flight Facility lot, looking north.

MIT INSTRUMENTATION LABORATORY FLIGHT FACILITY
(MIT Lincoln Laboratory Flight Test Facility)
(Massport Hangar 24)
Concord, Massachusetts
Photo 35



Northeastern Station, looking east.

MIT INSTRUMENTATION LABORATORY FLIGHT FACILITY
(MIT Lincoln Laboratory Flight Test Facility)
(Massport Hangar 24)
Concord, Massachusetts
Photo 36



Interior view of Northeastern Station, building, looking east.

Index to Historical Images

Photographer: MIT Museum and Lincoln Laboratories

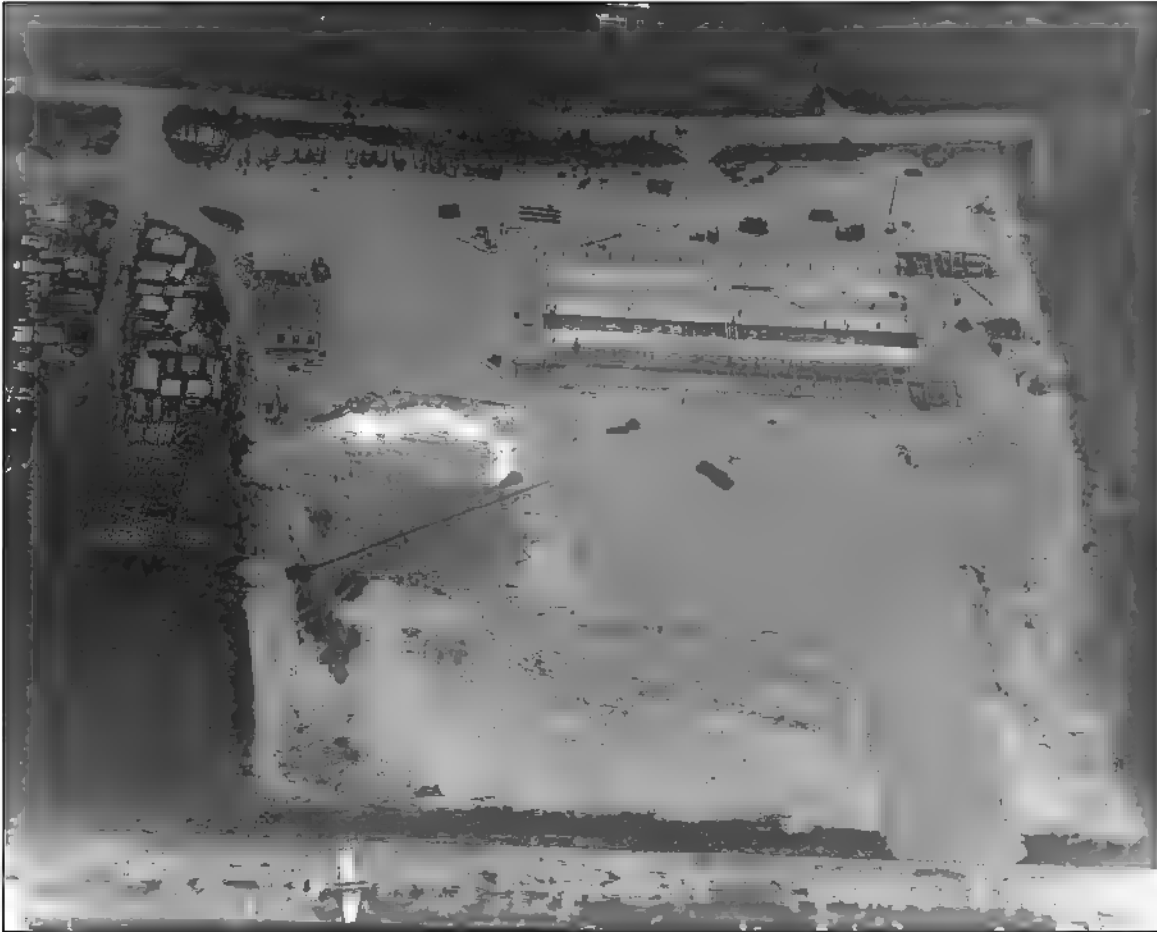
Cambridge and Lexington, Massachusetts

Date: August, 2009

1. Photograph of MIT Instrumentation Laboratory Flight Facility under construction (MIT Lincoln Laboratory Archives, Collection No. 266, Image No. 443323-1D. Reprinted with permission of MIT Lincoln Laboratory, Lexington, Massachusetts). H. Herman, August 29, 1948. Aerial view looking west.
 2. Photograph of Flight Facility under construction (MIT Lincoln Laboratory Archives, Collection No. 266, Image No. 443323-3D. Reprinted with permission of MIT Lincoln Laboratory, Lexington, Massachusetts). H. Herman, September 28, 1948. Facade looking west.
 3. Photograph of Flight Facility under construction (MIT Lincoln Laboratory Archives, Collection No. 266, Image No. 443323-2D. Reprinted with permission of MIT Lincoln Laboratory, Lexington, Massachusetts). H. Herman, September 28, 1948. Facade and North Lean-to, looking west.
 4. Photograph of Flight Facility under construction (MIT Lincoln Laboratory Archives, Collection No. 266, Image No. 443323-4D. Reprinted with permission of MIT Lincoln Laboratory, Lexington, Massachusetts). H. Herman, October 28, 1948. West elevation, looking southeast.
 5. Photograph of Flight Facility (MIT Lincoln Laboratory Archives, Collection No. 266, Image No. 443323-5D. Reprinted with permission of MIT Lincoln Laboratory, Lexington, Massachusetts). H. Herman, August 24, 1950. West elevation, looking northeast.
 6. Flight Facility with test aircraft on hangar apron (MIT Lincoln Laboratory Archives, Image No. P130-1655. Reprinted with permission of MIT Lincoln Laboratory, Lexington, Massachusetts). H. Herman, ca. 1950. Hangar apron, looking southwest.
 7. Photograph of CBS news journalist Eric Sevareid in front of a Boeing C-97 aircraft being loading with SPIRE, Jr. (Space Inertial Reference Equipment) apparatus prior to a test flight (Photo No. CSD39b. Courtesy MIT Museum, Cambridge, Massachusetts). Anon., March 6, 1958. Flight Facility apron, looking southwest.
 8. Photograph of CBS news journalist Eric Sevareid shaking hands with Charles Stark Draper in front of a Boeing C-97 aircraft prior to a flight test of SPIRE, Jr. equipment (Photo No. CSD39c. Courtesy MIT Museum, Cambridge, Massachusetts). Anon., March 6, 1958. Flight Facility, looking south.
 9. Photograph of Charles Stark Draper demonstrating his SPIRE, Jr. navigation instrument to CBS news journalist Eric Sevareid in a Boeing C-97 aircraft at the Flight Facility (Photo No. CSD39a. Courtesy MIT Museum, Cambridge, Massachusetts). Anon., March 6, 1958.
- MIT INSTRUMENTATION LABORATORY FLIGHT FACILITY
(MIT Lincoln Laboratory Flight Test Facility)
(Massport Hanger 24)
Concord, Massachusetts
(Page 10)
10. Photograph of PACE thermal model inner package disassembled in Flight Facility laboratory; showing gyro model, baffles, and heaters. PACE was an advanced inertial guidance system designed for use in boost-glide space vehicles (MIT Instrumentation Laboratory, *Pace Advanced Inertial Guidance System, Technical Report No. R-278* (1960):200. Courtesy of Draper Laboratory and MIT Museum, Cambridge, Massachusetts). MIT Instrumentation Laboratory, 1960.
 11. Photograph of aircraft used in testing the IPC (Intermittent Positive Control) and DABS (Discrete Address Beacon System) components of experimental air traffic control systems under development at MIT Lincoln Laboratory (MIT Lincoln Laboratory Archives, Image

- No. CP130-415. Reprinted with permission of MIT Lincoln Laboratory, Lexington, Massachusetts). MIT Lincoln Laboratories, circa 1972. Flight Facility, looking northwest.
12. Photograph of Flight Facility and MIT Lincoln Laboratory aircraft (MIT Lincoln Laboratory Archives, Image No. 250135-6C. Reprinted with permission of MIT Lincoln Laboratory, Lexington, Massachusetts). MIT Lincoln Laboratories, May 28, 2009. Aerial view, looking west.
13. Plan of Flight Facility showing original hangar and additions with related projects and dates (MIT Lincoln Laboratory Archives, Collection No. 746, Image No. 443323-6D. Reprinted with permission of MIT Lincoln Laboratory, Lexington, Massachusetts). Charles Stark Draper Laboratory Real Property Record, March 6, 1975.

MIT INSTRUMENTATION LABORATORY FLIGHT FACILITY
(MIT Lincoln Laboratory Flight Test Facility)
(Massport Hangar 24)
Concord, Massachusetts
Historical Photo 1



Photograph of MIT Instrumentation Laboratory Flight Facility under construction (MIT Lincoln Laboratory Archives, Collection No. 266, Image No. 443323-1D. Reprinted with permission of MIT Lincoln Laboratory, Lexington, Massachusetts). H. Herman, August 29, 1948. Aerial view looking west.

MIT INSTRUMENTATION LABORATORY FLIGHT FACILITY
(MIT Lincoln Laboratory Flight Test Facility)
(Massport Hangar 24)
Concord, Massachusetts
Historical Photo 2



Photograph of Flight Facility under construction (MIT Lincoln Laboratory Archives, Collection No. 266, Image No. 443323-3D. Reprinted with permission of MIT Lincoln Laboratory, Lexington, Massachusetts). H. Herman, September 28, 1948. Facade looking west.

MIT INSTRUMENTATION LABORATORY FLIGHT FACILITY
(MIT Lincoln Laboratory Flight Test Facility)
(Massport Hangar 24)
Concord, Massachusetts
Historical Photo 3



Photograph of Flight Facility under construction (MIT Lincoln Laboratory Archives, Collection No. 266, Image No. 443323-2D. Reprinted with permission of MIT Lincoln Laboratory, Lexington, Massachusetts). H. Herman, September 28, 1948. Facade and North Lean-to, looking west.

MIT INSTRUMENTATION LABORATORY FLIGHT FACILITY
(MIT Lincoln Laboratory Flight Test Facility)
(Massport Hangar 24)
Concord, Massachusetts
Historical Photo 4



Photograph of Flight Facility under construction (MIT Lincoln Laboratory Archives, Collection No. 266, Image No. 443323-4D. Reprinted with permission of MIT Lincoln Laboratory, Lexington, Massachusetts). H. Herman, October 28, 1948. West elevation, looking southeast.

MIT INSTRUMENTATION LABORATORY FLIGHT FACILITY
(MIT Lincoln Laboratory Flight Test Facility)
(Massport Hangar 24)
Concord, Massachusetts
Historical Photo 5



Photograph of Flight Facility (MIT Lincoln Laboratory Archives, Collection No. 266, Image No. 443323-5D. Reprinted with permission of MIT Lincoln Laboratory, Lexington, Massachusetts). H. Herman, August 24, 1950. West elevation, looking northeast.

MIT INSTRUMENTATION LABORATORY FLIGHT FACILITY
(MIT Lincoln Laboratory Flight Test Facility)
(Massport Hangar 24)
Concord, Massachusetts
Historical Photo 6



Flight Facility with test aircraft on hangar apron (MIT Lincoln Laboratory Archives, Image No. P130-1655. Reprinted with permission of MIT Lincoln Laboratory, Lexington, Massachusetts). H. Herman, ca. 1950. Hangar apron, looking southwest.

MIT INSTRUMENTATION LABORATORY FLIGHT FACILITY
(MIT Lincoln Laboratory Flight Test Facility)
(Massport Hangar 24)
Concord, Massachusetts
Historical Photo 7



Photograph of CBS news journalist Eric Sevareid in front of a Boeing C-97 aircraft being loading with SPIRE, Jr. (Space Inertial Reference Equipment) apparatus prior to a test flight (Photo No. CSD39b. Courtesy MIT Museum, Cambridge, Massachusetts). Anon., March 6, 1958. Flight Facility apron, looking southwest.

MIT INSTRUMENTATION LABORATORY FLIGHT FACILITY
(MIT Lincoln Laboratory Flight Test Facility)
(Massport Hangar 24)
Concord, Massachusetts
Historical Photo 8



Photograph of CBS news journalist Eric Sevareid shaking hands with Charles Stark Draper in front of a Boeing C-97 aircraft prior to a flight test of SPIRE, Jr. equipment (Photo No. CSD39c. Courtesy MIT Museum, Cambridge, Massachusetts). Anon., March 6, 1958. Flight Facility, looking south.

MIT INSTRUMENTATION LABORATORY FLIGHT FACILITY
(MIT Lincoln Laboratory Flight Test Facility)
(Massport Hangar 24)
Concord, Massachusetts
Historical Photo 9



Photograph of Charles Stark Draper demonstrating his SPIRE, Jr. navigation instrument to CBS news journalist Eric Severeid in a Boeing C-97 aircraft at the Flight Facility (Photo No. CSD39a. Courtesy MIT Museum, Cambridge, Massachusetts). Anon., March 6, 1958.

MIT INSTRUMENTATION LABORATORY FLIGHT FACILITY
(MIT Lincoln Laboratory Flight Test Facility)
(Massport Hangar 24)
Concord, Massachusetts
Historical Photo 10

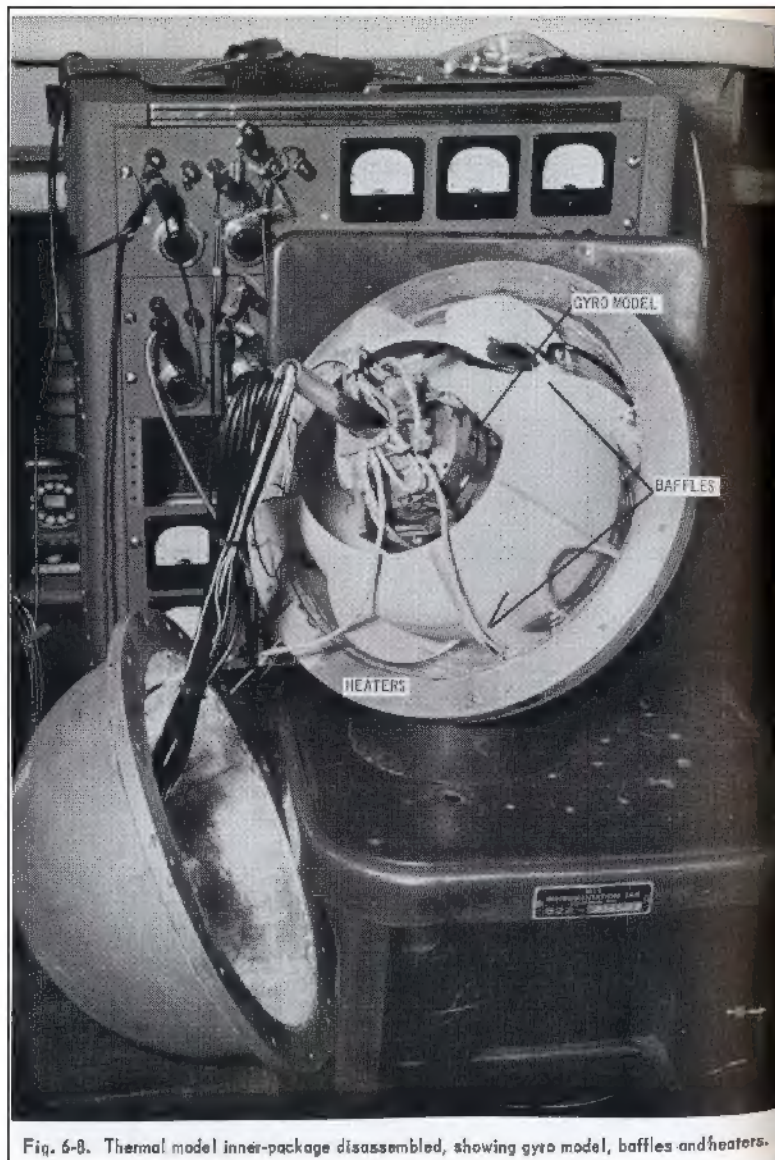


Fig. 6-8. Thermal model inner-package disassembled, showing gyro model, baffles and heaters.

Photograph of PACE thermal model inner package disassembled in Flight Facility laboratory; showing gyro model, baffles, and heaters. PACE was an advanced inertial guidance system designed for use in boost-glide space vehicles (MIT Instrumentation Laboratory, *Pace Advanced Inertial Guidance System, Technical Report No. R-278* (1960):200. Courtesy of Draper Laboratory and MIT Museum, Cambridge, Massachusetts). MIT Instrumentation Laboratory, 1960.

MIT INSTRUMENTATION LABORATORY FLIGHT FACILITY
(MIT Lincoln Laboratory Flight Test Facility)
(Massport Hangar 24)
Concord, Massachusetts
Historical Photo 11



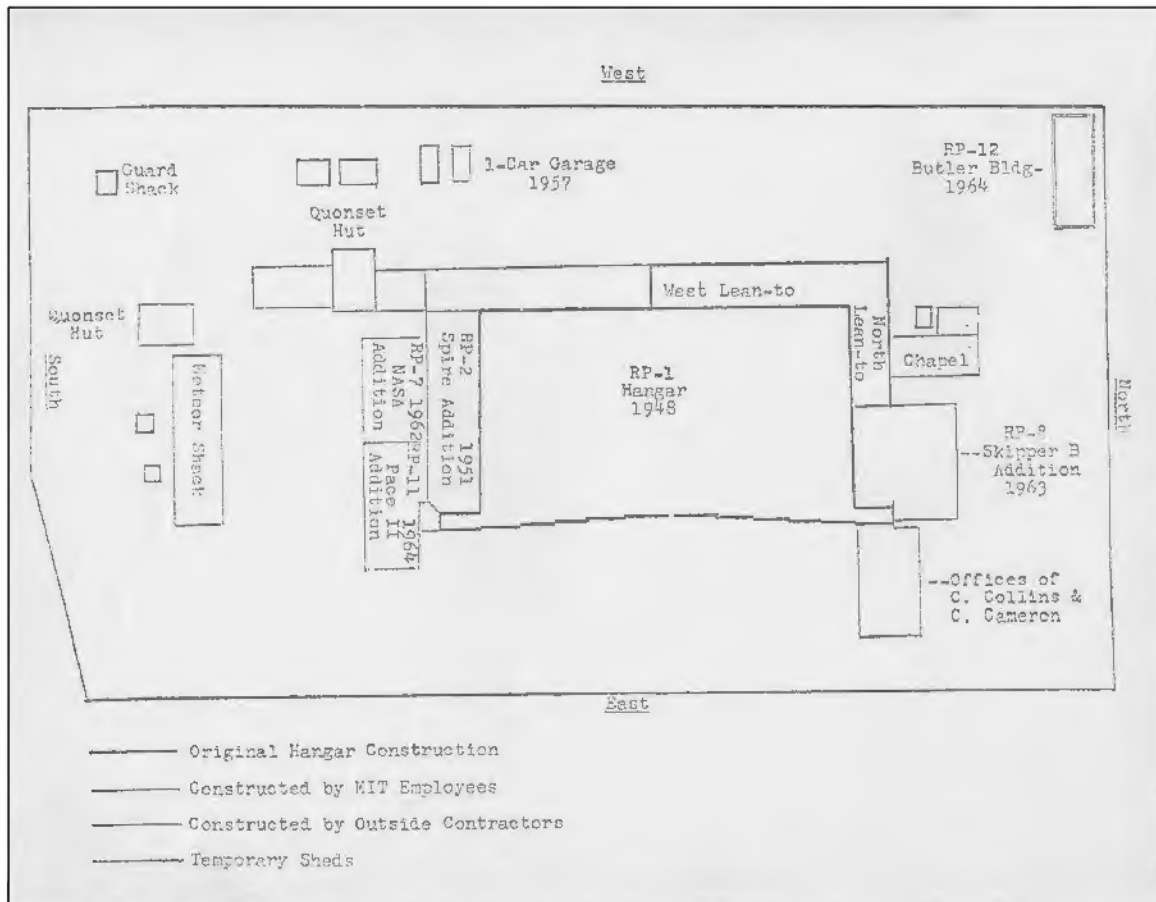
Photograph of aircraft used in testing the IPC (Intermittent Positive Control) and DABS (Discrete Address Beacon System) components of experimental air traffic control systems under development at MIT Lincoln Laboratory (MIT Lincoln Laboratory Archives, Image No. CP130-415. Reprinted with permission of MIT Lincoln Laboratory, Lexington, Massachusetts). MIT Lincoln Laboratories, circa 1972. Flight Facility, looking northwest.

MIT INSTRUMENTATION LABORATORY FLIGHT FACILITY
(MIT Lincoln Laboratory Flight Test Facility)
(Massport Hangar 24)
Concord, Massachusetts
Historical Photo 12



Photograph of Flight Facility and MIT Lincoln Laboratory aircraft (MIT Lincoln Laboratory Archives, Image No. 250135-6C. Reprinted with permission of MIT Lincoln Laboratory, Lexington, Massachusetts). MIT Lincoln Laboratories, May 28, 2009. Aerial view, looking west.

MIT INSTRUMENTATION LABORATORY FLIGHT FACILITY
(MIT Lincoln Laboratory Flight Test Facility)
(Massport Hangar 24)
Concord, Massachusetts
Historical Photo 13



Plan of Flight Facility showing original hangar and additions with related projects and dates (MIT Lincoln Laboratory Archives, Collection No. 746, Image No. 443323-6D. Reprinted with permission of MIT Lincoln Laboratory, Lexington, Massachusetts). Charles Stark Draper Laboratory Real Property Record, March 6, 1975.